

Application No. 10/733,584

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Remarks

Claims 1-5, 7-14, and 16-19 are pending in this application. Claims 1, 10, 18 and 19 have been amended.

Claims 1-5, 7-14, and 16-19 were rejected under 35 USC §102(b) as being anticipated by Chang et al. (2000). Applicants respectfully disagree.

Claim 1, as amended, claims a method for identifying hub experts within a community of users and authoritative items in a recommender system, comprising: identifying items in a particular field provided by users within the community; for each identified item: determining which users within the community have acted upon the identified item; determining which of the users who have acted upon the identified item are aware of other relevant items in the particular field and have not directly produced items in the particular field; and defining those users as hub experts in the particular field; determining which identified items have been acted upon by a predetermined number of hub experts; defining those items as authoritative items; and associating the hub experts with the authoritative items; wherein the determining steps comprise: defining a connectivity matrix  $M$ , wherein element  $M_{ij}$  is non-zero if and only if there is an arc from node  $i$  to node  $j$ ; wherein for a given node  $i$ ,  $a_i$  is an "authority" value and  $h_i$  is a "hub" value, such that:  $a_i = \sum_j M_{ji} h_j$  and  $h_i = \sum_j M_{ij} a_j$ , whose solutions are the principal eigenvectors of  $MM^T$  and  $MM'$ , respectively; and defining vectors  $a = [a_1, a_2, \dots, a_n]'$  and  $h = [h_1, h_2, \dots, h_n]'$ , such that  $a = M'h = MM'a$ , and  $h = Ma = MM'h$ .

Applicants' method as claimed in Claim 1 describes a method of determining hub experts in a community of users and authoritative documents in a recommender system. Applicants' method as claimed in Claim 10 describes a method of determining hub experts and authoritative experts in a recommender system. Hub experts are "users who have acted upon the identified item are aware of other relevant items in the particular field and have not directly produced items in the particular field".

In contrast, Chang describes a method of creating customized authority lists. Chang's method modified the HITS algorithm, because Chang notes a deficiency in the HITS algorithm (page 127, first column, last paragraph): "that while most of the popular (and thus most heavily linked) documents may be authoritative in many senses, they may not correspond to a particular

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user's internal model of 'authority.' A user may have the opinion, for example, that a particular document X is truly an authority, or that anything written by author Y is worthless. What this user would like is a measure of document authority that coincides with their own preconceived notion of what is important." Chang modifies the HITS algorithm, which provides a list of authoritative documents, by requesting user feedback. Chang "learns from a small amount of user feedback to realign the eigenvectors of the link matrix, effectively re-calibrating the measure of authority to correspond more closely to the user's internal model."

Chang does not teach or suggest the concept of hub users, i.e., "users who have acted upon identified items that are aware of other relevant items in the particular field and have not directly produced items in the particular field." In contrast, Chang teaches that documents may have hub scores and authority scores (see page 128, top of first column). "A large hub score means the document points to many good authorities; a large authority score means it is pointed to by many good hubs." In Chang, there is no concept of a hub user, only a hub score attributed to a document.

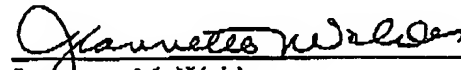
Independent Claims 10 and 18-19 have been similarly amended. Claims 1-5, 7-14, and 16-19 are believed to be in condition for allowance.

No additional fee is believed to be required for this amendment; however, the undersigned Xerox Corporation attorney hereby authorizes the charging of any necessary fees, other than the issue fee, to Xerox Corporation Deposit Account No. 24-0025.

Reconsideration of this application and allowance thereof are earnestly solicited. In the event the Examiner considers a personal contact advantageous to the disposition of this case, the Examiner is requested to call the undersigned Attorney for Applicants, Jeannette Walder.

Respectfully submitted,

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Date: December 14, 2006

  
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